ACCESS AREA SWITCHING AND SIGNALING: CONCEPTS, ISSUES, AND ALTERNATIVES

R.F. Linfield and M. Nesenbergs*

This report covers two key tasks of the Access Area Digital Switch (AADSS) program being conducted by NTIA/ITS for the U.S. Army Communications Systems Agency.

First, a brief introduction to digital electronic private automatic branch exchanges (PABX or EPABX) with stored program control is given, followed by some examples of system design. These examples offer a background, against which AADSS switching and signaling concepts, issues and alternatives can be reviewed. Furthermore, these systems provide integrated interfaces and digital switching to local access areas of the Defense Communications System (DCS). System functions and service features are discussed and initial cost projections given for installation sizes of interest.

Second, digital and analog signaling techniques of all existing types are reviewed. The main concepts in establishing and maintaining circuit connections and other message transactions are outlined in present day and near future technology. Interface issues during the foreseeable DCS transition from analog to digital integrated systems, as well as other signaling problems in the access area, are summarized.

1. DIGITAL PABX EXAMPLE

1.1. Introduction

This discussion deals with Private Automatic Branch Exchanges, otherwise known as PABX's. The field is further restricted not only to the electronic PABX (sometimes called EPABX), but also to digital connectivity which takes advantage of the time division switching technology. By definition, a PABX provides an exchange of calls among local users, and for calls to

*The authors are with the Institute for Telecommunication Sciences, National Telecommunications and Information Administration, U.S. Dept. of Commerce, Boulder, CO 80303.